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Kecamatan Batang Toru Tapanuli Selatan Toberni. :48–58.

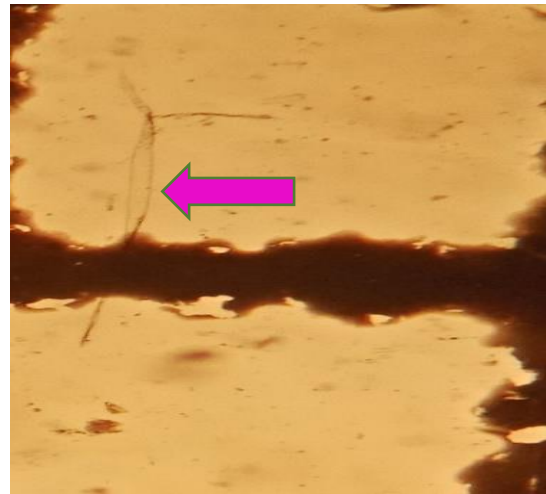
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## LAMPIRAN

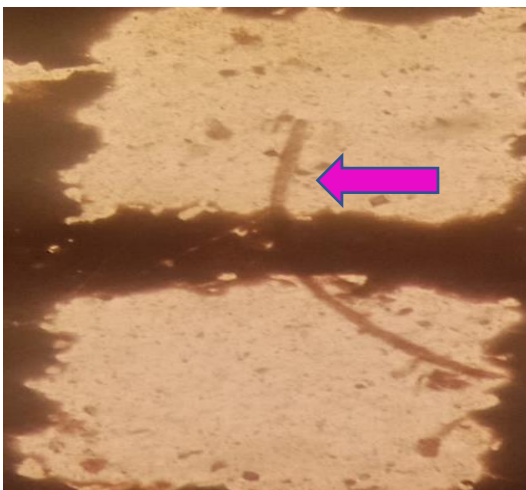
Lampiran 1. Gambar dan klasifikasi jenis makanan ikan sapu-sapu, *Pytrygoplichtys pardalis* (Castelnau, 1855)



*Nitzschia sigmaidea*



*Ankistrodesmus acicularis*



*Ankistrodesmus falcatus*



*Ankistrodesmus fusiformis*

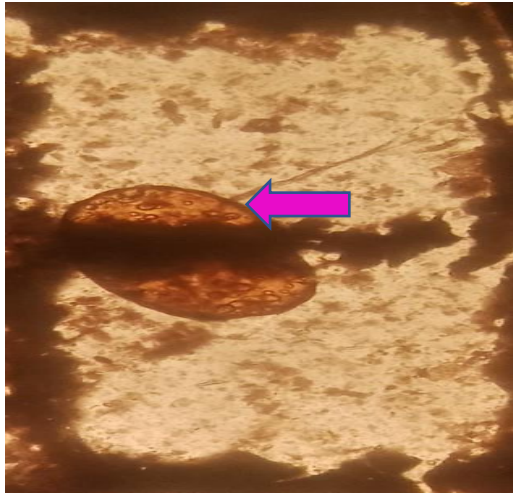


*Epithemia argus*

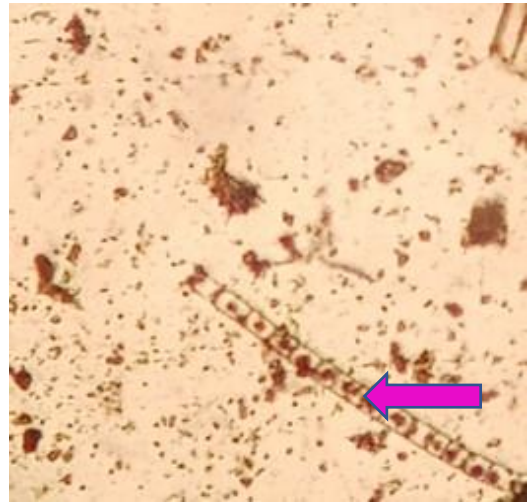


*Gomphosphaeria aponina*

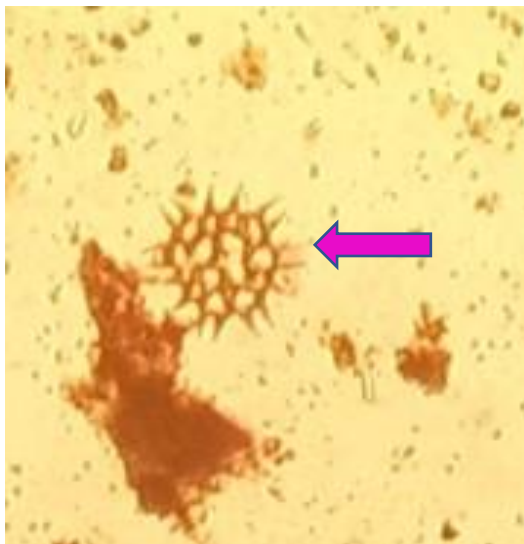
Lampiran 1. Lanjutan



*Mastogloia elliptica*



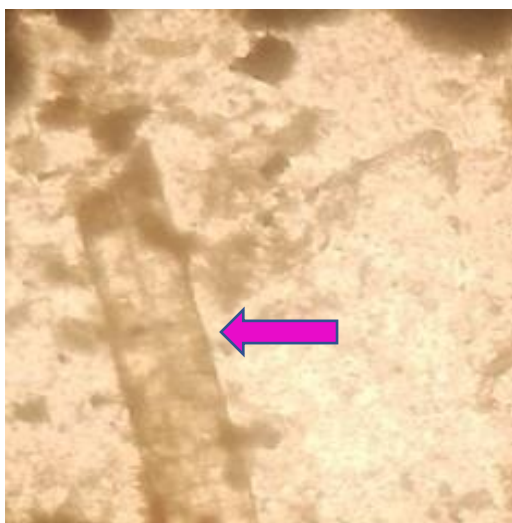
*Microspora*



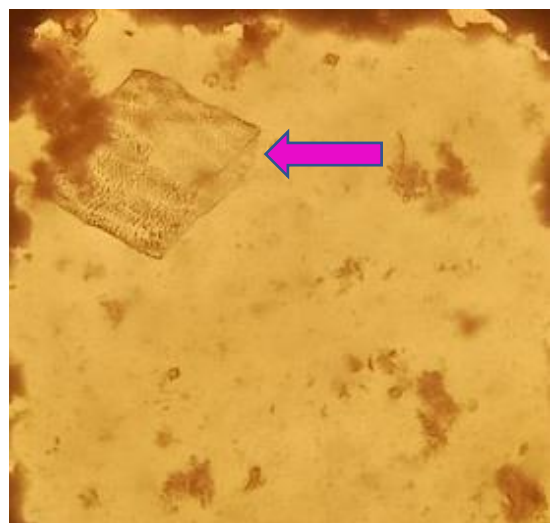
*Pediastrum boryanum*



*Phacotus lenticularis*



*Rhizosolenia styliformis*



*Tabellaria*

Lampiran 1. Lanjutan



*Navicula*



*Oscillatoria limnetica*



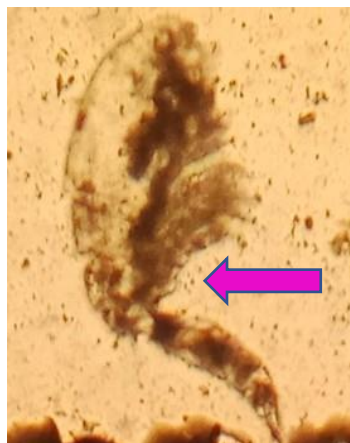
*Stauroneis*



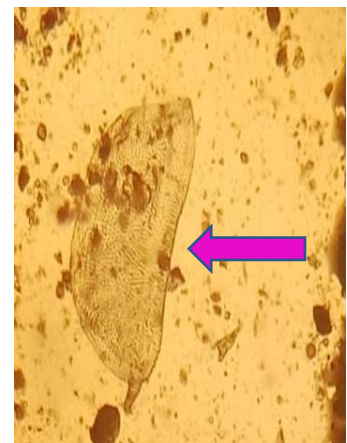
*Synedra acus*



*Cyclotella*



*Bosmina longirostris*



*Cypris*

Lampiran 1. Lanjutan

Empire	: Eukaryota	Empira	: Eukaryota
Kingdom	: Chromista	Kingdom	: Plantae
Phylum	: Bacillariophyta	Phylum	: Chlorophyta
Class	: Bacillariophyceae	Class	: Chlorophyceae
Order	: Bacillariales	Order	: Sphaeropleales
Family	: Bacillariaceae	Family	: Selenastraceae
Genus	: <i>Nitzschia</i>	Genus	: <i>Ankistrodesmus</i>
Species	: <i>N. sigmoidea</i> ,	Species	: <i>A. Acicular</i> ,
			<i>A. falcatus</i> ,
			<i>A. fusiformis</i>
Empire	: Eukaryota	Empire	: Prokaryota
Kingdom	: Chromista	Kingdom	: Eubacteria
Phylum	: Bacillariophyta	Filum	: Cyanobacteria
Class	: Bacillariophyceae	Class	: Cyanophyceae
Ordo	: Rhopalodiales	Ordo	: Chloococcales
Family	: Rhopalodiaceae	Family	: Gomphosphaeriaceae
Genus	: <i>Epithemia</i>	Genus	: <i>Gomphosphaeria</i>
Species	: <i>E. argus</i>	Species	: <i>G. aponina</i>
Empire	: Eukaryota	Devisi	: Chlorophyta
Kingdom	: Chromista	Class	: Chlorophyceae
Phylum	: Bacillariophyta	Ordo	: Sphaeropleales
Subphylum	: Bacillariophytina	Family	: Microsporaceae
Class	: Bacillariophyceae	Genus	: <i>Microspora</i>
Order	: Mastoglolales	Species	: <i>Microspora</i>
Family	: Mastoglolaceae	Empire	: Eukaryota
Genus	: <i>Mastogloia</i>	Kingdom	: Plantae
Species	: <i>M. elliptica</i>	Division	: Chlorophyta
		Class	: Chlorophyceae
		Ordo	: Chlorococcales
		Family	: Hydrodictyaceae
		Genus	: <i>Pediastrum</i>
		Species	: <i>P. boryanum</i>

Lampiran 1. Lanjutan

Empire : Eukaryota  
 Kingdom : Plantae  
 Subkingdom : Viridiplantae  
 Infrakingdom : Chlorophyta  
 Phylum : Chlorophyta  
 Class : Chlorophyceae  
 Family : Phacotaceae  
 Genus : *Phacotus*  
 Spesies : *P. lenticularis*

Kingdom : Chromista  
 Phylum : Ochrophyta  
 Class : Bacillariophyceae  
 Order : Rhizosoleniales  
 Family : Rhizosoleniaceae  
 Genus : *Rhizosolenia*  
 Spesies : *R. styliformis*

Kingdom : Chromista  
 Devisi : Bacillariophyta  
 Class : Bacillariophyceae  
 Family : Naviculaceae  
 Genus : *Navicula*  
 Spesies : *Navicula*

Kingdom : Chromista  
 Phylum : Bacillariophyta  
 Class : Bacillariophyceae  
 Order : Fragilariales  
 Family : Fragilariaceae  
 Genus : *Synedra*  
 Spesies : *S. acus*

Empire : Prokaryota  
 Kingdom : Eubacteria  
 Phylum : Cyanobacteria  
 Class : Cyanophyceae  
 Order : Oscillatoriales  
 Family : Oscillatoriaceae  
 Genus : *Oscillatoria*  
 Spesies : *O. limnetica*

Empire : Eukaryota  
 Kingdom : Chromista  
 Phylum : Bacillariophyta  
 Class : Bacillariophyceae  
 Ordo : Tabellariales  
 Family : Tabellariaceae  
 Genus : *Tabellaria*  
 Spesies : *Tabellaria*

Kingdom : Chromista  
 Phylum : Ochrophyta  
 Class : Bacillariophyceae  
 Order : Naviculales  
 Family : Stauroneidaceae  
 Genus : *Stauroneis*  
 Spesies : *Stauroneis*

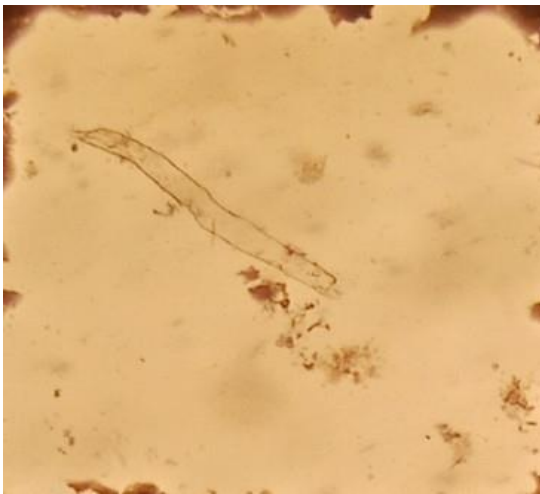
Devisi : Ochrophyta  
 Class : Bacillariophyceae  
 Order : Thalassiosirales  
 Family : Stephanodiscaceae  
 Genus : *Cyclotella*  
 Spesies : *Cyclotella*



Kingdom : Animalia  
Phylum : Arthropoda  
Class : Branchiopoda  
Subclass : Phyllopoda  
Order : Anomopoda  
Family : Bosminidae  
Genus : *Bosmina*  
Species : *B. longirostris*

Kingdom : Animalia  
Phylum : Arthropoda  
Class : Ostracoda  
Order : Padacopida  
Family : Cyprididae  
Genus : *Cypris*  
Species : *Cypris* sp.

Lampiran 2. Gambar jenis plankton yang ditemukan di perairan Danau Tempe



*Nitzschia sigmoidea*



*Ankistrodesmus acicularis*



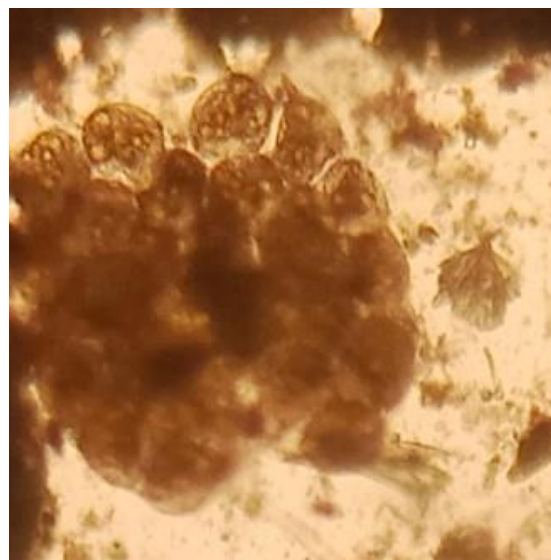
*Ankistrodesmus falcatus*



*Ankistrodesmus fusiformis*

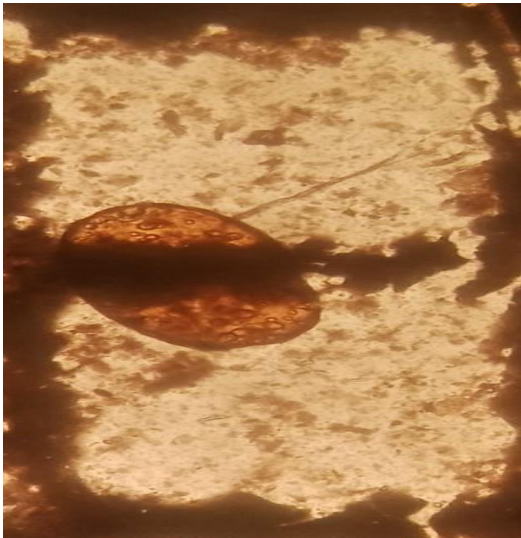


*Epitmeia argus*

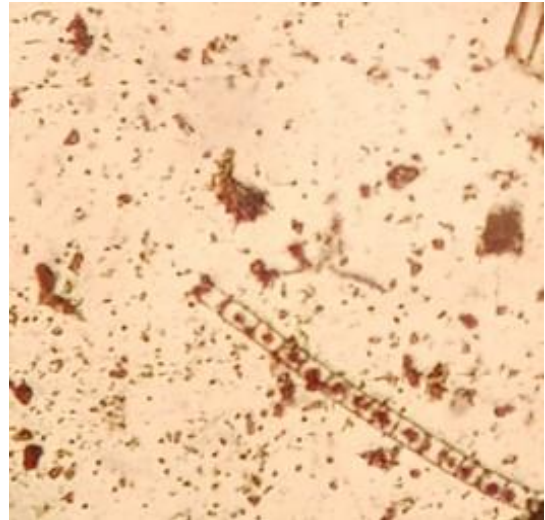


*Gomposphaeria aponina*

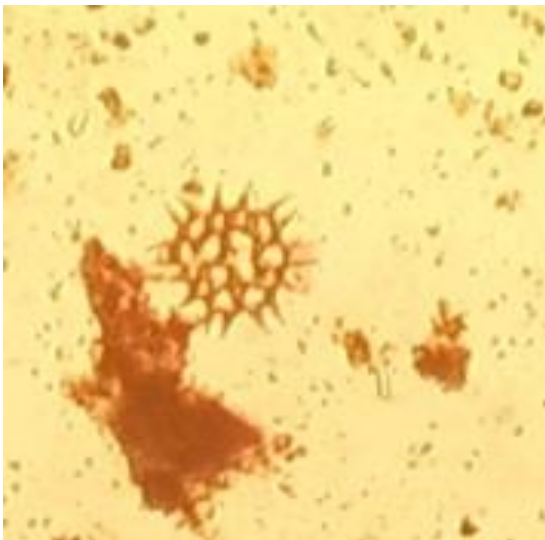
Lampiran 2. Lanjutan



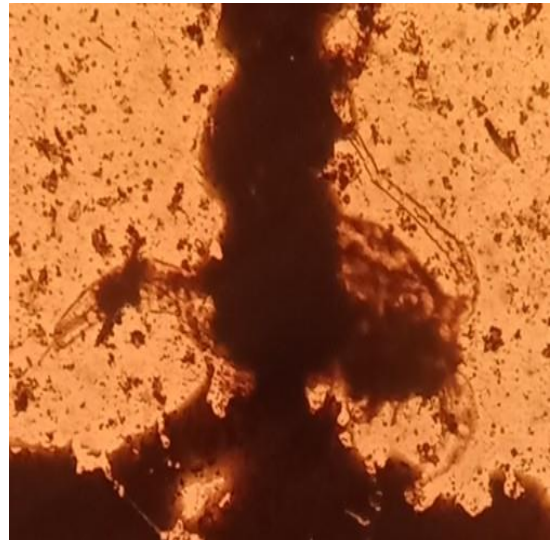
*Mastogloia elliptica*



*Microspora*



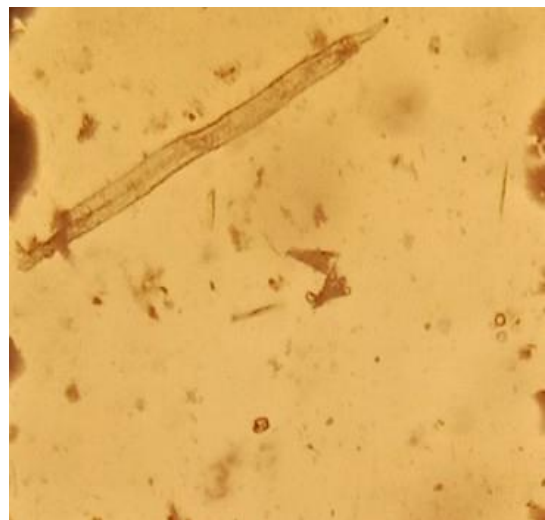
*Pediatrum boryanum*



*Phacotus lenticularis*



*Rhizosolenia styliformis*

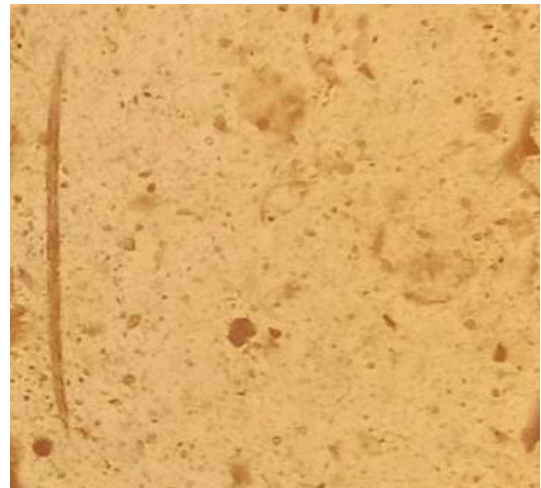


*Navicula*

Lampiran 2. Lanjutan



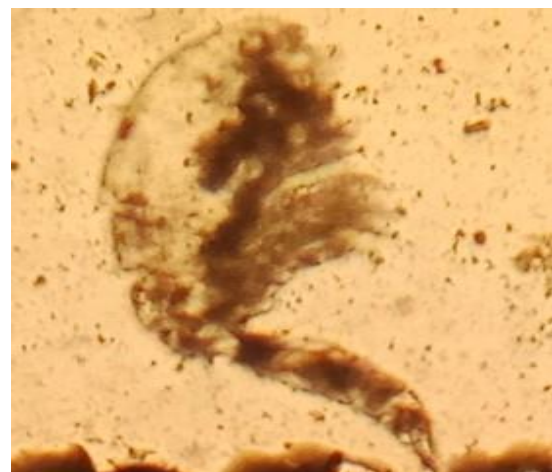
*Stauroneis*



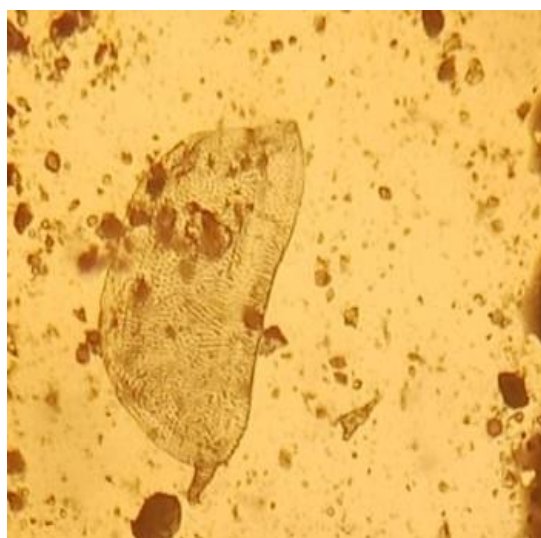
*Synedra acus*



*Cyclotella*



*Bosmina longirostris*



*Cypris*

Lampiran 2. Lanjutan

		Emp		
Empire	: Eukaryota	Empira	: Eukaryota	
Kingdom	: Chromista	Kingdom	: Plantae	
Phylum	: Bacillariophyta	Phylum	: Chlorophyta	
Class	: Bacillariophyceae	Class	: Chlorophyceae	
Order	: Bacillariales	Order	: Sphaeropleales	
Family	: Bacillariaceae	Family	: Selenastraceae	
Genus	: <i>Nitzschia</i>	Genus	: <i>Ankistrodesmus</i>	
Species	: <i>N. sigmoidea</i> ,	Species	: <i>A. Acicular</i> ,	
			<i>A. falcatus</i> ,	
			<i>A. fusiformis</i>	
Empire	: Eukaryota	Empire	: Prokaryota	
Kingdom	: Chromista	Kingdom	: Eubacteria	
Phylum	: Bacillariophyta	Filum	: Cyanobacteria	
Class	: Bacillariophyceae	Class	: Cyanophyceae	
Ordo	: Rhopalodiales	Ordo	: Chloococcales	
Family	: Rhopalodiaceae	Family	: Gomphosphaeriaceae	
Genus	: <i>Epithemia</i>	Genus	: <i>Gomphosphaeria</i>	
Species	: <i>E. argus</i>	Species	: <i>G. aponina</i>	
Empire	: Eukaryota	Devisi	: Chlorophyta	
Kingdom	: Chromista	Class	: Chlorophyceae	
Phylum	: Bacillariophyta	Ordo	: Sphaeropleales	
Subphylum	: Bacillariophytina	Family	: Microsporaceae	
Class	: Bacillariophyceae	Genus	: <i>Microspora</i>	
Order	: Mastoglolales	Species	: <i>Microspora</i>	
Family	: Mastoglolaceae			
Genus	: <i>Mastogloia</i>	Empire	: Eukaryota	
Species	: <i>M. elliptica</i>	Kingdom	: Plantae	
		Division	: Chlorophyta	
		Class	: Chlorophyceae	
		Ordo	: Chlorococcales	
		Family	: Hydrodictyceae	
		Genus	: <i>Pediastrum</i>	
		Species	: <i>P. boryanum</i>	

Lampiran 2. Lanjutan

Empire	: Eukaryota	Kingdom	: Chromista
Kingdom	: Plantae	Phylum	: Ochrophyta
Subkingdom	: Viridiplantae	Class	: Bacillariophyceae
Infrakingdom	: Chlorophyta	Order	: Naviculales
Phylum	: Chlorophyta	Family	: Stauroneidaceae
Class	: Chlorophyceae	Genus	: <i>Stauroneis</i>
Family	: Phacotaceae	Species	: <i>Stauroneis</i>
Genus	: <i>Phacotus</i>		
Species	: <i>P. lenticularis</i>	Devisi	: Ochrophyta
		Class	: Bacillariophyceae
Kingdom	: Chromista	Order	: Thalassiosirales
Phylum	: Ochrophyta	Family	: Stephanodiscaceae
Class	: Bacillariophyceae	Genus	: <i>Cyclotella</i>
Order	: Rhizosoleniales	Species	: <i>Cyclotella</i>
Family	: Rhizosoleniaceae		
Genus	: <i>Rhizosolenia</i>		
Species	: <i>R. styliformis</i>		
		Kingdom	: Animalia
		Phylum	: Arthropoda
Kingdom	: Chromista	Class	: Branchiopoda
Devisi	: Bacillariophyta	Subclass	: Phyllopoda
Class	: Bacillariophyceae	Order	: Anomopoda
Family	: Naviculaceae	Family	: Bosminidae
Genus	: <i>Navicula</i>	Genus	: <i>Bosmina</i>
Species	: <i>Navicula</i>	Species	: <i>B. longirostris</i>
Kingdom	: Eukaryota	Kingdom	: Animalia
Kingdom	: Chromista	Phylum	: Arthropoda
Phylum	: Bacillariophyta	Class	: Ostracoda
Class	: Bacillariophyceae	Order	: Padacopida
Order	: Fragilariales	Family	: Cyprididae
Family	: Fragilariaceae	Genus	: <i>Cypris</i>
Genus	: <i>Synedra</i>	Species	: <i>Cypris</i> sp.
Species	: <i>S.acus</i>		

Lampiran 3. Indeks Bagian Terbesar (%) jenis makanan ikan sapu-sapu, *Pterygoplichthys pardalis* (Castelnaud, 1855) jantan bulan Februari 2020

No	Kelas	Vi	Oi	Vi*Oi	IBT
1	Bacillariophyceae	57.3582	58.8305	3374.4118	76.3428
2	Chlorophyceae	6.6489	13.4845	89.6575	2.0284
3	Cyanophyceae	35.7565	26.7303	955.7824	21.6237
4	Ostracoda	0.2364	0.9547	0.2257	0.0051

Lampiran 4. Indeks Bagian Terbesar (%) jenis makanan ikan sapu-sapu, *Pterygoplichthys pardalis* (Castelnaud, 1855) betina bulan Februari 2020

No	Kelas	Vi	Oi	Vi*Oi	IBT
1	Bacillariophyceae	66.0956	58.1662	3844.5318	84.3991
2	Chlorophyceae	10.4211	18.9112	197.0758	4.3264
3	Cyanophyceae	23.2691	22.0630	513.3869	11.2704
4	Ostracoda	0.2141	0.8596	0.1841	0.0040

Lampiran 5. Indeks Bagian Terbesar (%) jenis makanan ikan sapu-sapu, *Pterygoplichthys pardalis* (Castelnaud, 1855) jantan pada bulan Juni 2020

No	Kelas	Vi	Oi	Vi*Oi	IBT
1	Bacillariophyceae	68.7898	57.1429	3930.8462	85.5540
2	Branchiopoda	0.3640	1.2422	0.4521	0.0098
3	Chlorophyceae	17.9254	25.0932	449.8047	9.7899
4	Cyanophyceae	12.9208	16.5217	213.4747	4.6462

Lampiran 6. Indeks Bagian Terbesar (%) jenis makanan ikan sapu-sapu, *Pterygoplichthys pardalis* (Castelnaud, 1855) betina pada bulan Juni 2020

No	Kelas	Vi	Oi	Vi*Oi	IBT
1	Bacillariophyceae	66.1390	57.8947	3829.1013	84.7772
2	Branchiopoda	0.3785	1.6917	0.6404	0.0142
3	Chlorophyceae	18.4102	23.3083	429.1096	9.5006
4	Cyanophyceae	15.0723	17.1053	257.8150	5.7081

Lampiran 7. Uji-t (Two-Sample Assuming Equal Variances) Indeks Bagian Terbesar (IBT) berdasarkan waktu pengambilan sampel ikan sapu-sapu, *Pterygoplichthys pardalis* (Castelnaud, 1855) jantan dan betina.

Bulan Februari 2020

	IBT Betina	IBT Jantan
Mean	25	25
Variance	1589.651929	1266.64119
Observations	4	4
Hypothesized Mean Difference	0	
Df	6	
t Stat	1.3295E-16	
P(T<=t) one-tail	0.5	
t Critical one-tail	1.943180274	
P(T<=t) two-tail	1	
t Critical two-tail	2.446911846	

	IBT Betina	IBT Jantan
Mean	25	25
Variance	1603.336627	1645.64031
Observations	4	4
Hypothesized Mean Difference	0	
Df	6	
t Stat	-1.24657E-16	
P(T<=t) one-tail	0.5	
t Critical one-tail	1.943180274	
P(T<=t) two-tail	1	
t Critical two-tail	2.446911846	

Lampiran 8. Indeksi Bagian Terbesar (%) jenis makanan ikan sapu-sapu, *Pterygoplichthys pardalis* (Castelnau, 1855) jantan yang berukuran kecil (225 - 317 mm)

No	Kelas	Vi	Oi	Vi*Oi	IBT
1	Bacillariophyceae	67.3165	58.2908	3923.9363	85.8978
2	Branchiopoda	0.2979	0.7653	0.2280	0.0050
3	Chlorophyceae	14.2702	20.2806	289.4092	6.3354
4	Cyanophyceae	17.9258	19.7704	354.4005	7.7581
5	Ostracoda	0.1895	0.8929	0.1692	0.0037

Lampiran 9. Indeksi Bagian Terbesar (%) jenis makanan ikan sapu-sapu, *Pterygoplichthys pardalis* (Castelnau, 1855) jantan yang berukuran sedang (320 - 410 mm)

No	Kelas	Vi	Oi	Vi*Oi	IBT
1	Bacillariophyceae	60.5458	58.0124	3512.4108	80.4351
2	Branchiopoda	0.1060	0.3727	0.0395	0.0009
3	Chlorophyceae	12.2682	18.1366	222.5031	5.0954
4	Cyanophyceae	27.0535	23.3540	631.8090	14.4686
5	Ostracoda	0.0265	0.1242	0.0033	0.0001

Lampiran 10. Indeksi Bagian Terbesar (%) jenis makanan Ikan sapu-sapu, *Pterygoplichthys pardalis* (Castelnau, 1855) jantan yang berukuran besar (420 - 505 mm)

No	Kelas	Vi	Oi	Vi*Oi	IBT
1	Bacillariophyceae	62.9032	54.5455	3431.0850	79.5377
2	Branchiopoda	0.3226	1.8182	0.5865	0.0136
3	Chlorophyceae	7.4194	18.1818	134.8974	3.1271
4	Cyanophyceae	29.3548	25.4545	747.2141	17.3215



Lampiran 11. Indeks Bagian Terbesar (%) jenis makanan ikan sapu-sapu, *Pterygoplichthys pardalis* (Castelnau, 1855) betina yang berukuran kecil (207 - 265 mm)

No	Kelas	Vi	Oi	Vi*Oi	IBT
1	Bacillariophyceae	66.8133	56.2000	3754.9060	84.1393
2	Branchiopoda	0.3599	1.4000	0.5038	0.0113
3	Chlorophyceae	18.9524	24.8000	470.0200	10.5321
4	Cyanophyceae	13.7945	17.2000	237.2651	5.3166
5	Ostracoda	0.0800	0.4000	0.0320	0.0007

Lampiran 12. Indeks Bagian Terbesar (%) jenis makanan ikan sapu-sapu, *terygoplichthys pardalis* (Castelnau, 1855) betina yang berukuran sedang (267 - 318 mm)

No	Kelas	Vi	Oi	Vi*Oi	IBT
1	Bacillariophyceae	64.2597	61.7816	3970.0682	85.2312
2	Branchiopoda	0.1214	0.5747	0.0697	0.0015
3	Chlorophyceae	11.8932	16.6667	198.2201	4.2555
4	Cyanophyceae	23.6650	20.6897	489.6217	10.5114
5	Ostracoda	0.0607	0.2874	0.0174	0.0004

Lampiran 13. Indeks Bagian Terbesar (%) jenis makanan ikan sapu-sapu, *Pterygoplichthys pardalis* (Castelnau, 1855) betina yang berukuran besar (319 - 382 mm )

No	Kelas	Vi	Oi	Vi*Oi	IBT
1	Bacillariophyceae	63.4686	51.1111	3243.9524	76.1501
2	Chlorophyceae	4.4280	20.0000	88.5609	2.0789
3	Cyanophyceae	32.1033	28.8889	927.4293	21.7709

Lampiran 14. Uji-t (Two-Sample Assuming Equal Variances) Indeks Bagian Terbesar (IBT) berdasarkan ukuran panjang total tubuh ikan sapu-sapu, *Pterygoplichthys pardalis* (Castelnau, 1855) jantan dan betina.

Indeks Bagian Terbesar Ikan Kecil		
	IBT Betina	IBT Jantan
Mean	20	20
Variance	1304.652364	1369.690936
Observations	5	5
Hypothesized Mean Difference	0	
Df	8	
t Stat	-3.07232E-16	
P(T<=t) one-tail	0.5	
t Critical one-tail	1.859548033	
P(T<=t) two-tail	1	
t Critical two-tail	2.306004133	

Indeks Bagian Terbesar Ikan Sedang

	<i>IBT Betina</i>	<i>IBT Jantan</i>
Mean	20	20
Variance	1348.240359	1176.27557
Observations	5	5
Hypothesized Mean Difference	0	
Df	8	
t Stat	1.58109E-16	
P(T<=t) one-tail	0.5	
t Critical one-tail	1.859548033	
P(T<=t) two-tail	1	
t Critical two-tail	2.306004133	

Indeks Bagian Terbesar Ikan Besar

	<i>IBT Betina</i>	<i>IBT Jantan</i>
Mean	33.3333333	25
Variance	1471.90331	1378.68853
Observations	3	4
Hypothesized Mean Difference	0	
Df	4	
t Stat	0.28833397	
P(T<=t) one-tail	0.39370752	
t Critical one-tail	2.13184678	
P(T<=t) two-tail	0.78741505	
t Critical two-tail	2.77644511	

Lampiran 15. Gambar alat pencernaan ikan sapu-sapu, *Pytrygoplichtys pardalis* (Castelnau, 1855)



Lampiran 15. Lanjutan



Lampiran 16. Uji-t (Two-Sample Assuming Equal Variances) Panjang Relatif Usus berdasarkan waktu pengamatan ikan sapu-sapu, *Pterygoplichthys pardalis* (Castelnau, 1855) jantan dan betina.

Bulan Februari 2020

	<i>RLG Betina</i>	<i>RLG Jantan</i>
Mean	14.40143985	13.30217474
Variance	15.78457383	14.72853548
Observations	29	86
Hypothesized Mean Difference	0	
Df	47	
t Stat	1.299511474	
P(T<=t) one-tail	0.100053306	
t Critical one-tail	1.677926722	
P(T<=t) two-tail	0.200106613	
t Critical two-tail	2.01174048	

Bulan Juni 2020

	<i>RLG Brtina</i>	<i>RLG Jantan</i>
Mean	18.49360019	15.85386452
Variance	23.48747863	23.03337435
Observations	38	57
Hypothesized Mean Difference	0	
Df	79	
t Stat	2.610931711	
P(T<=t) one-tail	0.005400487	
t Critical one-tail	1.66437141	
P(T<=t) two-tail	0.010800974	
t Critical two-tail	1.990450177	

Lampiran 17. Uji-t (Two-Sample Assuming Equal Variances) Panjang Relatif Usus berdasarkan ukuran panjang total (mm) ikan sapu-sapu, *Pterygoplichthys pardalis* (Castelnau, 1855) jantan dan betina

Ukuran kecil ikan sapu-sapu

	<i>RLG Betina</i>	<i>RLG Jantan</i>
Mean	17.9555756	16.21197017
Variance	23.34306821	20.0516736
Observations	37	68
Hypothesized Mean Difference	0	
Df	69	
t Stat	1.812159246	
P(T<=t) one-tail	0.037156297	
t Critical one-tail	1.667238549	
P(T<=t) two-tail	0.074312594	
t Critical two-tail	1.99494539	

Ukuran sedang ikan sapu-sapu

	<i>RLG Betiina</i>	<i>RLG Jantan</i>
Mean	15.63991291	12.83820762
Variance	16.38828574	12.63429102
Observations	26	70
Hypothesized Mean Difference	0	
Df	40	
t Stat	3.111453309	
P(T<=t) one-tail	0.001714276	
t Critical one-tail	1.683851014	
P(T<=t) two-tail	0.003428551	
t Critical two-tail	2.02107537	

ukuran besar ikan sapu-sapu

	<i>RLG</i>	<i>RLG</i>
Mean	12.35113246	9.313759873
Variance	57.73761137	6.836113963
Observations	4	5
Hypothesized Mean Difference	0	
Df	4	
t Stat	0.764094695	
P(T<=t) one-tail	0.243697862	
t Critical one-tail	2.131846782	
P(T<=t) two-tail	0.487395725	
t Critical two-tail	2.776445105	